determining an alignment status by comparing the length of the calculated front wheel track to a specified range for the front wheel track and comparing the length of the calculated rear wheel track to a specified range for the rear wheel track.

6. (Twice Amended) A method of determining alignment between the wheels of a vehicle using a position determination system that indicates wheel positions on the vehicle with targets, the method comprising the steps of:

imaging the targets to obtain locations of the wheel positions;

calculating the length a right wheel base, the right wheel base being defined as the distance of a line passing adjacent a first right wheel and perpendicularly from the wheel track passing through the first right wheel to the wheel track passing through a second right wheel;

calculating the length of a left wheel base, the left wheel base being defined as the distance of a line passing adjacent a first left wheel and perpendicularly from the wheel track passing through the first left wheel to the wheel track passing through a second left wheel; and

determining an alignment status by comparing the length of the right wheel base to a specified range for the right wheel base and comparing the length the left wheel base to a specified range for the left wheel base.

8. (Twice Amended) A method of determining alignment between the wheels of a vehicle using a position determination system that indicates wheel positions on the vehicle with targets, the method comprising the steps of:

imaging the targets to obtain locations of the wheel positions;

calculating the length of a right wheel base, the right wheel base being defined between the locations of the two right wheels;

calculating the length a left wheel base, the left wheel base being defined between the locations of the two left wheels; and

determining an alignment status by comparing the length of the right wheel base to a specified range for the right wheel base and comparing the length of the left wheel base to a specified range for the left wheel base.

12. (Twice Amended) A method of determining alignment between the wheels of a vehicle using a position determination system that indicates wheel positions on the vehicle with targets, the method comprising the steps of:

imaging the targets to obtain locations of the wheel positions;

calculating a first diagonal, the first diagonal being defined between the locations of the right, front wheel and the left, rear wheel;

calculating a second diagonal, the second diagonal being defined between the locations of left, front wheel and the right, rear wheel;

calculating a difference between the first diagonal and the second diagonal; and

determining an alignment status based on the calculated difference between the first diagonal and the second diagonal.

13. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system that indicates wheel positions on the vehicle with targets, the method comprising the steps of:

imaging the targets to obtain locations of the wheel positions;

calculating a first diagonal, the first diagonal being defined between the locations of the right, front wheel and the left, rear wheel;

calculating a second diagonal, the second diagonal being defined between the locations of left, front wheel and the right, rear wheel; and

determining an alignment status by comparing the calculated first diagonal to a specified range for the first diagonal and comparing the calculated second diagonal to a specified range for the second diagonal.

14. (Once Amended) A method of determining alignment between the wheels of a vehicle using a position determination system that indicates wheel positions on the vehicle with targets, the method comprising the steps of:

imaging the targets to obtain locations of the wheel positions;

calculating a first diagonal, the first diagonal being defined between the locations of the right, front wheel and the left, rear wheel;

calculating a second diagonal, the second diagonal being defined between the locations of left, front wheel and the right, rear wheel;

calculating a first skew angle, the first skew angle being defined as the angle between the first diagonal and one of the wheel tracks;

calculating a second skew angle, the second skew angle being defined as the angle between the second diagonal and the other of the wheel tracks; and

determining an alignment status based on the first skew angle and the second skew angle.

15. (Twice Amended) The method according to claim 14, wherein the step of determining an alignment status includes calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a specified range for the difference between the first skew angle and the second skew angle.

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16. (Once Amended) The method according to claim 14, wherein the step of determining an alignment status includes comparing the calculated first skew angle to a specified range for the first skew angle and comparing the calculated second skew angle to a specified range for the second skew angle.

20. (Twice Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for calculating a relationship between the front and rear wheels of the vehicle;

wherein the vision imaging system calculates a front wheel track and a rear wheel track with the front wheel track being defined between the locations of the two front wheels and the rear wheel track being defined between the locations of the two rear wheels; and

wherein the calculation of the relationship between the front and rear wheels includes comparing the length of the calculated front wheel track to a specified range for the front wheel track and comparing the length of the calculated rear wheel track to a specified range for the rear wheel track.

22. (Twice Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for determining an alignment status;

wherein the vision imaging system calculates the length of a right wheel base and the length of a left wheel base with the right wheel base being defined as the distance of a line

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passing adjacent a first of the right wheels and perpendicularly from the wheel track passing through the first right wheel to the wheel track passing through a second of the right wheels and the left wheel base being defined as the distance of a line passing adjacent a first of the left wheels and perpendicularly from the wheel track passing through the first left wheel to the wheel track passing through a second of the left wheels; and

wherein the vision imaging system determines the alignment status by comparing the length of the right wheel base to a specified range for the right wheel base and comparing the length of the left wheel base to a specified range for the left wheel base.

24. (Twice Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

a vision imaging system for imaging the targets to obtain locations of the wheel positions and for determining an alignment status;

wherein the vision imaging system calculates the length of a right wheel base and the length of a left wheel base with the right wheel base being defined between the locations of the two right wheels and the left wheel base being defined between the locations of the two left wheels; and

wherein the vision imaging system determines the alignment status by comparing the length of the right wheel base to a specified range for the right wheel base and comparing the length of the left wheel base to a specified range for the left wheel base.

27. (Twice Amended) A computer-implemented position determination system for determining alignment between the wheels of a vehicle, comprising:

one or more targets for indicating wheels positions on the vehicle; and

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a vision imaging system for imaging the targets to obtain locations of the wheel positions and for determining an alignment status based on a first diagonal and a second diagonal;

wherein the first diagonal is defined between the locations of the right, front wheel and the left, rear wheel and the second diagonal is defined between the locations of left, front wheel and the right, rear wheel.

28. (Twice Amended) The system according to claim 27, wherein the vision imaging system determines the alignment status by calculating a difference between the first diagonal and the second diagonal and comparing the calculated difference between the first diagonal and the second diagonal to a specified range for the difference between the first diagonal and the second diagonal.

29. (Once Amended) The system according to claim 27, wherein the vision imaging system determines the alignment status comparing the first diagonal to a specified range for the first diagonal and comparing the second diagonal to a specified range for the second diagonal.

31. (Twice Amended) The system according to claim 30, wherein the vision imaging system determines the alignment status by calculating a difference between the first skew angle and the second skew angle and comparing the calculated difference between the first skew angle and the second skew angle to a specified range for the difference between the first skew angle and the second skew angle.

32. (Once Amended) The system according to claim 30, wherein the vision imaging system determines the alignment status by comparing the calculated first skew angle to a specified range for the first skew angle and comparing the calculated second skew angle to a specified range for the second skew angle.